

Comments on Draft Report for Intermountain Power Station

EPA: Page 3 – Need to elaborate more on why other CCR impoundments located on site and reported by the company in their CERCLA 104e survey response were not assessed.

State:

From: "David Marble" <davemarble@utah.gov>
To: James Kohler/DC/USEPA/US@EPA
Date: 02/02/2011 12:48 PM
Subject: Re: Comment Request on City of Los Angeles Intermountain Power Draft Report

Jim,

I reviewed the draft report referenced in your report. The assessments appear to be consistent with those made by this office.

David Marble

David K. Marble, P.E.
Assistant Utah State Engineer / Dam Safety
(801) 538-7376
davemarble@utah.gov

Company: See letter dated February 23, 2011.

EPA Contractor Response: See letter dated April 21, 2011



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February 23, 2011

Mr. Stephen Hoffman
US Environmental Protection Agency
Two Potomac Yard
2733 South Crystal Drive
5th Floor, N-5237
Arlington, VA 22202-2733

Dear Mr. Hoffman:

Subject: Draft Report – Specific Site Assessment for Coal Combustion Waste Impoundments at Intermountain Generating Station, Delta, Utah.

The Los Angeles Department of Water and Power (LADWP) appreciates the opportunity to comment on the Environmental Protection Agency's Draft Report – Specific site Assessment for Coal Combustion Waste Impoundments at Intermountain Power Station, Delta, Utah. The Report was written by GEI Consultants, Inc., 4601 DTC Blvd., Suite 900, Denver, CO 80237.

As an operating agent for Intermountain Power Service Corporation and Intermountain Generating Station (IGS), LADWP disagrees with Recommendations Nos. 12.1 and 12.2 that slope stability analyses for the impoundments should be performed and instruments should be installed to monitor the impoundment movement or settlement. The impoundments were designed and constructed in accordance with engineering standards based on the results of many geotechnical studies and reports which were performed prior to the construction and the impoundments met all regulatory requirements. Slope stability analyses and movement monitoring instrumentation have never been a regulatory requirement. In addition, during more than 25 years of continuous operations and inspections, there have never been any signs of seepage at the toes or on the sides of the embankments. The impoundments have been inspected every five years by the Utah Division of Water Rights (also known as the Utah State Engineer's Office), the regulatory agency charged with the dams and impoundments safety and the agency has never indicated nor required that the instrumentation was needed for these impoundments.

In regard to the "Fair" rating of the impoundments, Section 12.5 of the Report summarized that the impoundments are low hazard structures based on federal and state classifications, they are in good conditions at the time of assessment, and the operational procedures are adequate. In addition, the thorough inspection performed by GEI Consultants, Inc. did not find any existing or

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Mr. Stephen Hoffman
Page 2
February 23, 2011

potential safety deficiencies associated with the impoundments. As a result, LADWP requests that the overall rating of surface impoundments units at IGS be changed from Fair to Satisfactory. Detailed comments are provided in the attachment to this letter.

For additional information or questions regarding this comment letter, please contact Mr. Blaine Ipson of IGS at (435) 864-6484.

Sincerely,

A handwritten signature in black ink, reading "Mark J. Sedlacek". The signature is written in a cursive, flowing style.

Mark J. Sedlacek
Director of Environmental Affairs

DQ:lr

Enclosure

c: Mr. Blaine Ipson – Intermountain Generating Station, Delta, Utah

**Intermountain Power Service Corporation
Intermountain Generating Station
Comments on GEI Consultants, Inc. Draft Report "Specific Site Assessment for Coal
Combustion Waste Impoundments a Intermountain Power Station"**

1. Front page, Report Title: **Change** "Intermountain Power Station" **to** "Intermountain Generating Station."
2. All pages, Report Footer: **Change** "Intermountain Power Station" **to** "Intermountain Generating Station."
3. Page iii, Table of Contents – Acronym List: **Change** "IPS" (Intermountain Power Station) **to** "IGS" (Intermountain Generating Station.) Throughout the draft Report, there are many places where "IPS" should be replaced with "IGS" and "IPS" should be replaced with "IPSC". All of these corrections are listed below.
4. Page 4, Section 2.2, Top of Page, Fifth Line: **Change** "...IPS personnel indicated that currently about 200 gallons per day (gdp)" **to** "...IPSC personnel indicated that currently about 25 gallons per minute (gpm)."
5. Page 4, Section 2.2, Second Paragraph, Third Line: **Change** "...design depth of 46." **to** "...design depth of 46 feet."
6. Page 6, Section 2.7, First Paragraph, Third Line: **Change** "...IPS is a wet coal ash disposal facility, producing significant amounts of sluiced CCW material." **to** "...At IGS, the majority of CCW which includes the fly ash and the majority of the flue gas desulfurization material is handled on a dry basis. The bottom ash CCW material is handled on a wet basis."
7. Page 6, Section 2.7, Second Paragraph, First Line: **Change** "Waste includes fly ash/flue gas emissions, bottom ash, boiler slag, and other process materials." **to** "The CCW material handled wet includes bottom ash, boiler slag, and other materials."
8. Page 7, Section 3.0, Second Paragraph, Tenth Line: **Change** "...about 200 gallons per day ..." **to** "...about 25 gallons per minute..."
9. Page 8, Section 4.2, Second Paragraph, Fourth Line: **Change** "...flooded area would be extensive ..." **to** "...flooded area would occur ..." The word "extensive" is very subjective. IPSC does not believe that it would be extensive at all.
10. Page 8, Section 4.3, Second Paragraph, Fourth Line: **Change** "...flooded area would be extensive ..." **to** "...flooded area would occur ..." The word "extensive" is very subjective. IPSC does not believe that it would be extensive at all.
11. Page 13, Section 7.3, Line 2: Given the logistics of the flow structures, it would be difficult and impractical to put measuring devices on the flows into and out of the storage basins. IPSC does not see the technical or operational need to implement this.

12. Page 19, Section 12.0, Recommendations: This section recommends that slope stability analyses for the CCW impoundments be performed and instrumentation and monitoring program be developed and implements. IPSC does not believe these measures are necessary. IGS's impoundments were designed and constructed according to engineering standards. The impoundments were designed and constructed in accordance with engineering standards based on the results of many geotechnical studies and reports which were performed prior to the construction and the impoundments met all regulatory requirements. Slope stability analyses were not a regulatory requirement when the impoundments were constructed, and still are not a regulatory requirement today. The impoundments are located off-channel, the flows going into each of the impoundments can be completely regulated. These impoundments are lined with HDPE liners on the water side and are inspected regularly. No evidence of seepage on the toes or sides of the embankments has ever been seen in more than 25 years the impoundments have been in service. There is nothing located downstream of the embankments that would be harmed if one of the structures did fail. In addition, the impoundments have been inspected every five years by the Utah Division of Water Rights (also known as the Utah State Engineer's Office), the state regulatory agency responsible for the dams and impoundments safety and the agency has never indicated nor required that the instrumentation was needed for these impoundments.
13. Page 21, Section 12.6: The impoundments are given a "Fair" rating. IPSC believes that the rating should be "Satisfactory" because the Report summarized that the impoundments are low hazard structures based on federal and state classifications, they are in good conditions at the time of assessment, and the operational procedures are adequate. In addition, during the inspection performed by GEI Consultants, Inc., no existing or potential safety deficiencies associated with the impoundments were identified. LADWP requests that the overall rating be changed from Fair to Satisfactory.
14. Appendix A, Inspection Checklists, Bottom Ash Basin #2, Page 1, Inspection Issue #19 in the Footnote: This footnote #19 says "A few minor erosion gullies were observed along the east dike slopes." This is incorrect and not possible. The east dike slope of Bottom Ash Basin #2 is completely lined with HDPE liner and has no soil erosion. It appears that this comment really applies to the east dike slope of Bottom Ash Basin #1, and GEI inadvertently copied and carried it over to Inspection Checklist for Bottom Ash Basin #2 from the Inspection Checklist for Bottom Ash Basin #1.
15. Appendix A, Inspection Checklists, Bottom Ash Basin #3, Page 1, Inspection Issue #19 in the Footnote: This footnote #19 says "A few minor erosion gullies were observed along the east dike slopes." Again, GEI probably inadvertently carried this over to Inspection Checklist for Bottom Ash Basin #3 from the Inspection Checklist for Bottom Ash Basin #1. The east dike slope of Bottom Ash Basin #3 does not have minor erosion gullies, the east slope is lined with HDPE liner and has no erosion. However, the west dike slope of Bottom Ash Basin #3 does have a few minor erosion gullies.
16. Appendix B, Page B-9, Photo 16: **Change** "Wastewater Holding Pond, looking east at reservoir area and east dike from west dike." **to** "Wastewater Holding Pond, looking south from reservoir area and south dike".
17. Page 1, Section 1.1, First Paragraph, Second Line: **Change** "...Intermountain Power Station (IPS)..." **to** "...Intermountain Generating Station (IGS)..."

18. Page 3, Section 2.1, First Paragraph, First Line: **Change** "Intermountain Power Station" to "IGS".
19. Page 3, Section 2.1, Second Paragraph, First and Last Lines: **Change** "Intermountain Power Station" to "IGS".
20. Page 3, Section 2.1, Fourth Paragraph, Third Line: **Change** "IPS" to "IGS".
21. Page 4, Section 2.2, First Paragraph, Fourth Line: **Change** "IPS" to "IPSC".
22. Page 5, Section 2.5, First Line: **Change** "Intermountain Power Station" to "IGS".
23. Page 6, Section 2.7, First Paragraph, First Line: **Change** "IPS" to "IGS".
24. Page 6, Section 2.7, Fourth Paragraph, First Line: **Change** "IPS" to "IPSC".
25. Page 6, Section 2.7, Fourth Paragraph, Fourth Line: **Change** "IPS" to "IPSC".
26. Page 7, Section 3.0, First Paragraph, First Line: **Change** "Intermountain Power Station" to "IGS".
27. Page 7, Section 3.0, First Paragraph, Third Line: **Change** "IPS" to "IGS".
28. Page 7, Section 3.0, Second Paragraph, Fifth and Tenth Lines: **Change** "IPS" to "IPSC".
29. Page 7, Section 3.0, Third Paragraph, Third and Fifth Lines: **Change** "IPS" to "IPSC".
30. Page 8, Section 4.2, Third Paragraph, Sixth Line: **Change** "IPS" to "IGS".
31. Page 9, Section 4.3, First Paragraph, Line at top of Page: **Change** "IPS" to "IGS".
32. Page 10, Section 5.1, First Paragraph, Second Line: **Change** "Intermountain Power Station (IPS)" to "IGS".
33. Page 10, Section 5.2, Sixteenth Line: **Change** "Intermountain Power Station" to "IGS".
34. Page 11, Section 5.2.5: **Change** "IPS" to "IGS".
35. Page 11, Section 5.4, Second Line: **Change** "IPS" to "IGS".
36. Page 12, Section 6.0, First Paragraph, Second and Third Lines: **Change** "Intermountain Power Station" to "IGS".
37. Page 12, Section 6: Geologic and Seismic Considerations, Third Paragraph stated "*The depths of the groundwater surface in the area range between 17 and 45 feet below the existing ground surface. No evidence of perched or artesian conditions was encountered at depths ranging from 50 to 100 feet below the ground surface during the geotechnical investigations*". It appears that the groundwater depth ranges were not consistent and we would suggest eliminating the least correct depth range from this statement.

38. Page 13, Section 7.1, First Line: **Change** "Intermountain Power Station" **to** "IGS".
39. Page 13, Section 7.1, Fourth and Fifth Line: **Change** "IPS" **to** "IPSC"
40. Page 13, Section 7.3, First Line: **Change** "IPS" **to** "IGS".
41. Page 14, Section 8.1, First Paragraph, First Line: **Change** "Intermountain Power Station" **to** "IGS".
42. Page 16, Section 9.2, First Bullet: **Change** "Intermountain Power Station" **to** "IGS".
43. Page 16, Section 9.3, Second Line: **Change** "Intermountain Power Station" **to** "IGS".
44. Page 16, Section 9.4: Seismic Stability - Liquefaction Potential: This section stated that *"The potential liquefaction at the plant site is very low."* It is further stated that, due to very similar soils characteristics of the terrain encompassing the CCWs, *"the liquefaction potential at the CCW impoundments (is considered) to also be low"*. Because the plant site and CCW site are geotechnically very similar, it is out opinion that the liquefaction potential at the CCW site should also be "very" low as is the plant site.
45. Page 17, Section 10.1, First Line: **Change** "IPS" **to** "IPSC".
46. Page 17, Section 10.2, First, Second, and Third Lines: **Change** "IPS" **to** "IPSC".
47. Page 18, Section 11.1.1, Second Line: **Change** "Intermountain Power Station" **to** "IGS".
48. Page 18, Section 11.1.5, First Line: **Change** "Intermountain Power Station" **to** "IGS".
49. Page 18, Section 11.1.5, Third Line: **Change** "IPS" **to** "IPSC".
50. Page 19, Section 12.3, First, Third, and Fourth Lines: **Change** "IPS" **to** "IPSC".
51. Page 20, Section 12.5, Second Line: **Change** "IPS" **to** "IGS".



Geotechnical
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April 21, 2011
GEI Project No. 092884

Ms. Jana Englander
US Environmental Protection Agency
2733 South Crystal Drive, 5th Floor
Arlington, VA 22202

**Subject: Company Comments on Draft SSA Report for Round 8
City of Los Angeles - Intermountain Power Project**

Dear Ms. Englander:

GEI Consultants, Inc. appreciates receiving the comments on the report and offers the following responses. The original comment is re-stated below, followed by our response.

Comment Number 15. Appendix A, Inspection Checklists, Bottom Ash Basin #3, Page 1, Inspection Issue #19 in the Footnote: This footnote #19 says "A few minor erosion gullies were observed along the east dike slopes." Again, GEI probably inadvertently carried this over to Inspection Checklist for Bottom Ash Basin #3 from the Inspection Checklist for Bottom Ash Basin #1. The east dike slope of Bottom Ash Basin #3 does not have minor erosion gullies; the east slope is lined with HDPE liner and has no erosion. However, the west dike slope of Bottom Ash Basin #3 does have a few minor erosion gullies.

Response to Comment Number 15:

We agree, and a revised version of the Final Report has been provided to USEPA to correct the checklist for Bottom Ash Basin #3. Also, Figure 2 of the report showed the locations of Bottom Ash Basins in reverse order. The correct order is Bottom Ash Basin #1 on the east and Bottom Ash Basin #3 on the west. Figure 2 has been corrected.

General Comment No. 1: As an operating agent for Intermountain Power Service Corporation and Intermountain Generating Station (IGS), LADWP disagrees with Recommendations Nos. 12.1 and 12.2 that slope stability analyses for the impoundments should be performed and instruments should be installed to monitor the impoundment movement or settlement. The impoundments were designed and constructed in accordance with engineering standards based on the results of many geotechnical studies and reports which were performed prior to the construction and the impoundments met all regulatory requirements. Slope stability analyses and movement monitoring instrumentation have never been a regulatory requirement. In addition, during more than 25 years of continuous operations and inspections, there have never been any signs of seepage at the toes or on the sides of the embankments. The impoundments have been inspected every five years by the Utah Division of Water Rights (also known as the Utah State Engineer's Office), the regulatory agency charged with the dams and impoundments safety, and the agency has never indicated nor required that the instrumentation was needed for these impoundments.

In regard to the "Fair" rating of the impoundments, Section 12.5 of the Report summarized that the impoundments are low hazard structures based on federal and state classifications, they are in good condition at the time of assessment, and the operational procedures are adequate. In addition, the thorough inspection performed by GEI Consultants, Inc. did not find any existing or potential safety deficiencies associated with the impoundments. As a result, LADWP requests that the overall rating of surface impoundments units at IGS be changed from Fair to Satisfactory. Detailed comments are provided in the attachment to this letter.

Response to General Comment No. 1: We recognize that substantial geotechnical studies and reports were performed for the project and site, however stability analyses specific to the impoundments do not appear to have been performed and were not available for review. A stability analysis is considered a critical analysis as part of the USEPA coal ash impoundment assessment program. Additional stability analyses should be performed if the initial design analyses do not exist or are incomplete (FERC Engineering Guidelines for Evaluation of Hydropower Projects, Chapter 4, September 2006). The Utah Administrative Code R655-11-6 includes factor of safety requirements for embankment dams, which may be waived by the State Engineer. The facility has had seepage issues primarily associated with lining failures in the early history of the project. Signs of seepage at the toes or on the side slopes of the embankments would be associated with late-stage development of a significant seepage condition, and the lack of such evidence only indicates the seepage condition did not develop to this stage. The generally good condition of the impoundments based on visual inspection and other provided documentation weighed favorably against the lack of the critical stability analyses in GEI's assignment of Fair for the impoundments in that we would expect acceptable performance of the facility under all loading conditions but the facility is deficient in the identified studies and investigations.

Comment Number 11. Page 13, Section 7.3, Line 2: Given the logistics of the flow structures, it would be difficult and impractical to put measuring devices on the flows into and out of the storage basins. IPSC does not see the technical or operational need to implement this.

Response to Comment Number 11: We commented in our evaluation of instrumentation that the project would benefit from having flow measurement devices to measure and record flows into and out of the storage basins. Flow measurement devices would provide a data for performing water balance calculations that could provide estimates of evaporation losses and a means to identify potential significant leaks or losses in the liners or conveyance pipes. This comment was not considered a significant issue for the facility and consequently was not carried forward into the recommendations.

Comment Number 12. Page 19, Section 12.0, Recommendations: This section recommends that slope stability analyses for the CCW impoundments be performed and instrumentation and monitoring program be developed and implemented. IPSC does not believe these measures are necessary. IGS's impoundments were designed and constructed according to engineering standards. The impoundments were designed and constructed in accordance with engineering standards based on the results of many geotechnical studies and reports which were performed prior to the construction and the impoundments met all regulatory requirements. Slope stability analyses were not a regulatory requirement when the impoundments were constructed, and still are not a regulatory requirement today. The impoundments are located off-channel. The flows going into each of the impoundments can be completely regulated. These impoundments are lined with HDPE liners on the water side and are inspected regularly. No evidence of seepage on the toes or sides of the embankments has ever been seen in more than 25 years the impoundments have been in service. There is nothing located downstream of the embankments that would be harmed if one of the structures did fail. In addition, the impoundments have been inspected every five years by the Utah Division of Water Rights (also known as the Utah State Engineer's Office), the state regulatory agency responsible for the dams and

impoundments safety, and the agency has never indicated nor required that the instrumentation was needed for these impoundments.

Response to Comment Number 12: See response to General Comment Number 1 with regard to stability analysis. The facility has had significant seepage events in the past. Instrumentation can provide early warning of changes to an impoundment that may not otherwise be readily recognized. Establishing points of reference for movement or deformation of the embankments and for high water levels is consistent with a basic monitoring program for impoundments that receive sluiced coal combustion waste and that lack an emergency overflow spillway.

Comment Number 13. Page 21, Section 12.6: The impoundments are given a "Fair" rating. IPSC believes that the rating should be "Satisfactory" because the Report summarized that the impoundments are low hazard structures based on federal and state classifications, they are in good conditions at the time of assessment, and the operational procedures are adequate. In addition, during the inspection performed by GEI Consultants, Inc., no existing or potential safety deficiencies associated with the impoundments were identified. LADWP requests that the overall rating be changed from Fair to Satisfactory.

Response to Comment Number 13: See response to General Comment Number 1.

In addition, the caption for Photo 16 in Appendix B has been corrected, and the reference to the FERC has been corrected in Section 12.1 of the report.

We appreciate the opportunity to respond to these comments. If you have any questions, please contact me.

Sincerely,

GEI Consultants, Inc.



Stephen G. Brown, P.E.
Senior Project Manager

SGB/sk